THE MORTON ARBORETUM

Joy Morton, founder LISLE, ILLINOIS

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TREES OF THE MORTON ARBORETUM (DECIDUOUS) XIII

Quercus montana Willd., Chestnut Oak, Rock Oak, Mountain Oak

The common names by which this oak is known in various parts of its range provide definite clues to certain of its characteristics, as well as to the type of habitat in which it occurs. For, its foliage is Chestnut-like, and it does frequent rocky areas where the soil is poor and the topography hilly. The extent of its range attests to its hardiness, occurring as it does from southern Maine westward through Ohio and southern Indiana and southward through Kentucky and Tennessee. It is most abundant in Appalachian highlands, where it often occurs in pure stands, but it reaches greatest size on the lower slopes of the mountain ranges of the Carolinas and Tennessee.

A moderate sized tree, usually not growing taller than 60 or 70 feet, it does in congenial soils sometimes reach 100 feet. With large ascending limbs and spreading branches, it eventually develops a broad crown of open appearance. In rocky locations, however, the trunks have a tendency to divide near the base, resulting in a tree of more open, irregular shape.

Comparing the foliage of the Chestnut Oak with true Chestnut, one will find the leaves of the oak of broader, obovate-elliptic outline, with coarsely scalloped margins, more blunt tips and rounded or wedge-shaped bases. The texture is more leathery, too, and the color a richer green, with lighter, grayish-pubescent, rather than yellow undersurfaces. Stout, yellow midribs and from 10 to 16 pairs of straight primary veins further characterize the oak. In size the leaves range from 5 to 9 inches long and from 1½ to 4 inches wide. They are attached to the twigs by short (½ to 1″) petioles. The twigs themselves are stout and green with a purplish-brown cast when young. Later they change to reddish-brown and eventually gray. The flowers appear in late May, the staminate in pendulous catkins, the smaller, pistillate, two or more together at the leaf bases. From the latter develop the rich brown acorns borne singly or in pairs on short, stout stems. They are from 1 to 1½ inches long and from ⅝ to 1 inch in thickness, and are enclosed about half their length by thin, rough-scaly cups. The kernels are white and sweet flavored.

Rough, deeply fissured, dark brown or nearly black bark is an important means of distinguishing Chestnut Oak from the Yellow Chestnut Oak described in the following paragraphs. It is an important source of tannin.

Although designated in Alfred Rehder's, *Manual of Cultivated Trees and Shrubs,* as a climatic Zone IV plant, *Quercus montana* is indigenous to only one locality in Illinois—the rocky slopes of Atwood Ridge in Union County. This is at the extreme southern tip of the state.

Quercus muhlenbergi Engelm. (syn. *acuminata* Sarg.)
Yellow Chestnut Oak, Chinquapin Oak

Of the several species comprising the Chestnut Oak group this is the one whose foliage most closely resembles true American Chestnut. Yellow refers, of course, to the leaf color, and the other name, Chinquapin Oak, to the similarity of the tree's edible acorns to the nuts of the Chinquapin, a species of Chestnut.

Quercus muhlenbergi has a much wider distribution in Illinois than the preceding species, occurring in thirty-six counties, including all but one of those along the Wisconsin border. There is no record of its having been found in DuPage County, but an indigenous tree may be seen along West River Road north of Aurora, opposite the entrance to Mooseheart. What is considered the state's largest specimen is in Brownfield Woods northeast of Urbana, a tree which in 1929 was 80 feet tall and 29 inches in diameter. It is growing there in moist, level woodland. Outside of the state the range extends from Vermont to Virginia and Georgia and westward to Nebraska, Oklahoma, Texas and New Mexico, with the largest specimens along the lower Wabash River valley. It is most common on well drained, calcareous soils.

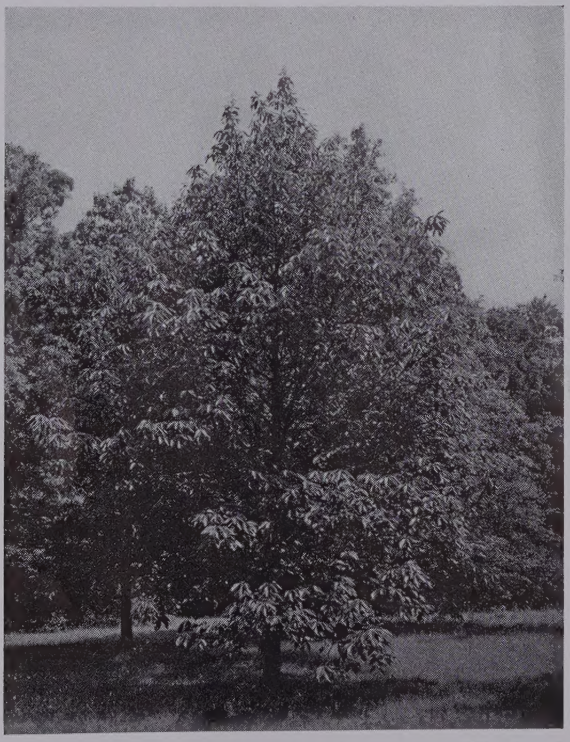
Resembling the White Oak in general appearance, this species also tends to be short-trunked and to develop wide-spreading branches. The resultant contour is broad and rounded. In forest stands, of course, it forms a straight, columnar bole topped with a narrow, rounded crown. It is the thin, light, ashy-gray bark broken into flaky scales which is the never-failing identifying ear-mark, however, the one feature separating *Q. muhlenbergi* from other so-called Chestnut Oaks.

The pointed-tipped, Chestnut-like foliage has already been mentioned, and while the similarity is marked, certain differences are evident. For one thing, the oak's coloring tends more to yellow-green, with a grayish note added by the pubescent undersurfaces. Texturally the leaves of both are smooth and leathery, but the leaf margins of the oak are broken by coarse, uniform, glandular-tipped teeth with incurved points. There is considerable variability in leaf shape and size, the range being from oblong-lanceolate to broadly-obovate. The length varies from 4 to 7 inches and the width from 1 to 5. Short, slender petioles (¾ to 1½" long) attach the leaves to the glabrous, light or reddish-brown twigs. The small, pointed buds are about half the size of those of Chestnut Oak.

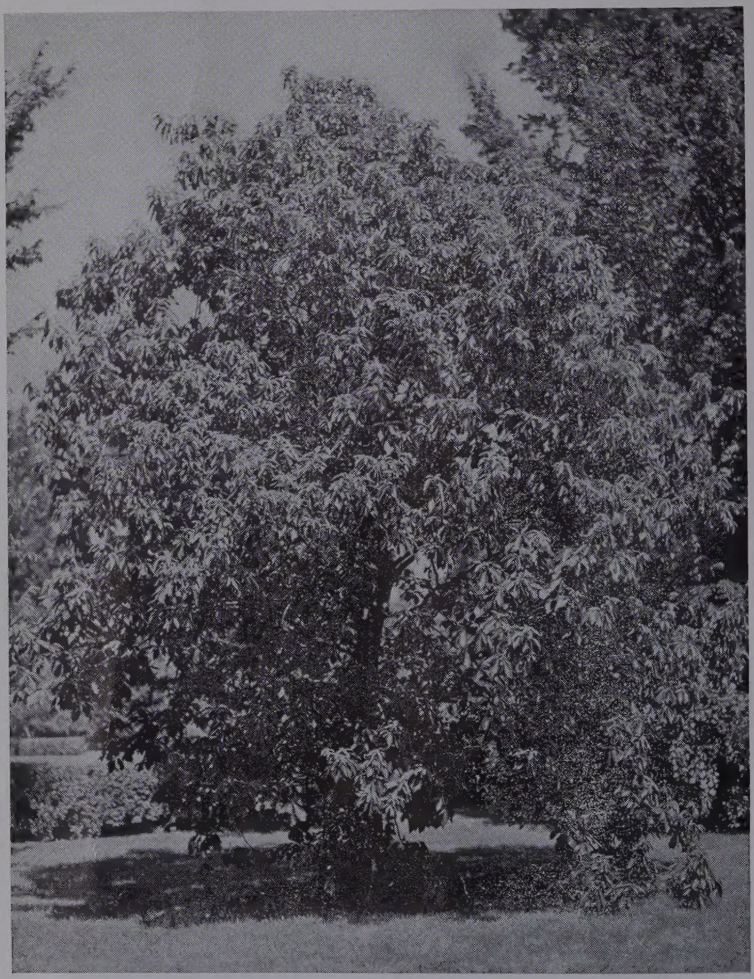
Flowering occurs in late May just as the leaves are developing, but only the close observer will notice the 3 to 4 inch, pendulous, pollen bearing catkins, and the less conspicuous pistillate inflorescences appearing in short woolly clusters in the axils of the new leaves. The chestnut-brown to nearly black acorns which follow appear singly or in pairs, either on short stalks or seated directly on the slender, brown twigs. They are from ½ to ¾ of an inch long, oval shaped, and half buried in thin, deep brown, bowl-shaped cups covered with small, indistinct scales. The sweet acorns are considered the most edible of all of the oaks, and like those of the Chestnut Oak they ripen the first season.

The fact that its wood is of economic importance, having the same qualities as White Oak, has made the Yellow Chestnut Oak the prey of lumbermen in many areas. A sufficient number of fine old specimens still stand, however, to show the ruggedness of structure and beauty of foliage for which the tree has always been admired.

E. L. Kammerer



Yellow Chestnut Oak specimen *(Quercus muhlenbergi-* Engelm.) south of Oakwood Drive opposite the original Oak Collection.



The best specimen of Chestnut Oak *(Quercus montana* Willd.) in the Arboretum is this tree directly south of the lower level of the Hedge Garden.

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